



SPEEDCHECK®

SPEEDCHECK-15 LED DISPLAY BOARDS REPLACEMENT GUIDE

For the SPEEDCHECK-15 radar speed signs



89439_REPLACEMENT_GUIDE_SPEEDCHECK-15_LED_DISPLAY_BOARDS_REVB

This page intentionally left blank.

Table of Contents

Table of Contents	3
1.0 Warnings and Precautions	4
1.1 Warranty Disclaimer	4
1.2 Standards	4
1.3 Safety and Usage Precautions	4
2.0 Installation Procedure	6
2.1 SPEEDCHECK-15 – LED Display Board Removal and Replacement	7
2.2 Low Power Mode (10mA Setting)	12

1.0 Warnings and Precautions

The following symbols indicate important safety warnings and precautions throughout this guide:



WARNING indicates that serious bodily harm or death may result from failure to adhere to the precautions.



CAUTION indicates that damage to equipment may result if the instructions are not followed.



NOTE suggests optimal conditions and provides additional information.

1.1 Warranty Disclaimer

This guide will familiarize you with the features and installation of Carmanah's SPEEDCHECK-15 LED display boards. Failure to comply with the use, storage, maintenance, installation or placement instructions detailed in this guide could void the warranty.

1.2 Standards

Perform all installation, wiring, grounding and maintenance in conformance with local building and electrical codes. Adherence to the National Electrical Code (NEC) is mandatory to comply with any certification markings. Non-adherence to code may void the warranty.

1.3 Safety and Usage Precautions



Use extreme caution when handling the batteries as they can generate hazardous short-circuit currents. Remove all jewelry (bracelets, metal-strap watches, etc.) before entering the cabinet.



Before lifting any heavy or bulky equipment, ensure the load is secured so moving parts do not shift, and that it can be lifted as far as needed without back strain or loss of grip. Installation may require more than one person.



Ensure the equipment is not powered during installation and wiring of the system.



Recheck all completed wiring for proper polarity prior to energizing the system.

NOTE

Changes or modifications to Carmanah equipment not expressly approved by Carmanah could void both the user's authority to operate the equipment and the warranty.

NOTE

All Carmanah traffic products use a constant-current LED output circuit. Not all traffic beacons are compatible with this output. Please contact Carmanah for additional information and guidance when adding or replacing beacons or other hardware.

NOTE

This guide is specific to the SPEEDCHECK-15 LED display board kit installation and is not a replacement for the complete product user manual.

Visit support.carmanah.com to download the complete product user manual.

2.0 Installation Procedure

This guide is for installing replacement SPEEDCHECK-15 LED display boards into the following compatible Carmanah system:

- SPEEDCHECK-15



SPEEDCHECK-18 systems are sealed and do not have field replaceable LED display boards.



Ensure system power is removed before accessing and removing the LED display boards. If you cannot remove power before accessing the inside of the SPEEDCHECK-15 enclosure, have caution when handling the LED boards while powered. Legacy LED display boards have exposed solder joints on the rear and if they make contact with the bare metal enclosure with power applied damage can occur.

Refer to the individual product user manual for more details at support.carmanah.com. Your replacement LED display board kit will be specific to your installation configuration. You will receive a left and right LED display board plus new cabling.

Type	“88” LED Color	Slow Down LED Color	Application	Notes
“88” only	Yellow	N/A	Radar Speed	
“88” only	White	N/A	Variable Speed Limit	
“88” + Slow Down	Yellow	Yellow	Radar Speed	
“88” + Slow Down	Yellow	Red	Radar Speed	Red is not MUTCD compliant
“88” + Slow Down	White	Yellow	Radar Speed	White is not MUTCD compliant
Slow Down only	N/A	Yellow	Advisory	
Slow Down only	N/A	Red	Advisory	

The images in this guide may differ from your SPEEDCHECK-15 radar speed sign. They are for illustrative purposes only.

2.1 SPEEDCHECK-15 – LED Display Board Removal and Replacement



ENSURE DEVICE IS COMPLETELY POWERED OFF SO THERE IS NO DANGER OF ELECTRICAL SHOCK OR RISK OF DAMAGING EQUIPMENT.

1. Disconnect power to the SPEEDCHECK-15 sign by turning off the breaker or removing the fuse(s) in the associated power cabinet.
2. Remove the two hex head screws, one on each side, holding the sign face to the radar enclosure.
3. Tilt the sign to the rear and lift to remove.
4. Lift window retainer clip and tilt window forward. Lift and remove window.



Take note of sign retention bolts, one on each side



Remove the two fasteners



Tilt sign to rear



Lift up to remove



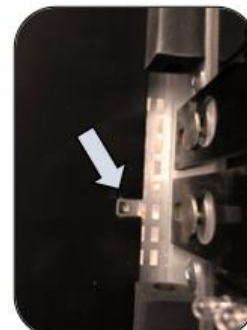
Lift window retainer clip



Optional: If present, disconnect strobe connectors.



Tilt the window forward and lift to remove

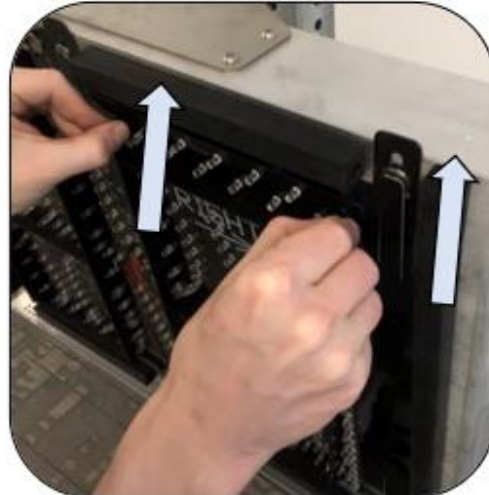


Take note of window alignment stud for re-installation

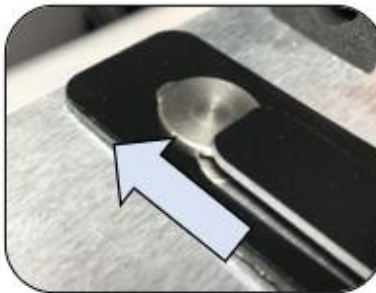
- Remove the right LED board by pulling it towards you about 1/4". Pull up by grasping the LED board stiffeners only. When the retainer tabs clear the top hanger pins slide the LED board upwards and then pull down to clear the bottom hanger pins.



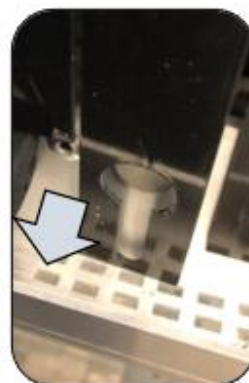
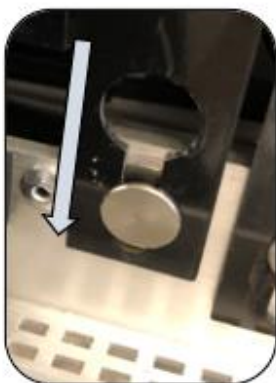
Being very careful not to touch the LED lamps, grasp the circuit board stiffeners at the top.



Pull the circuit board toward you about 1/4". When the retainer tabs clear the hanger pins, slide the circuit board upwards.

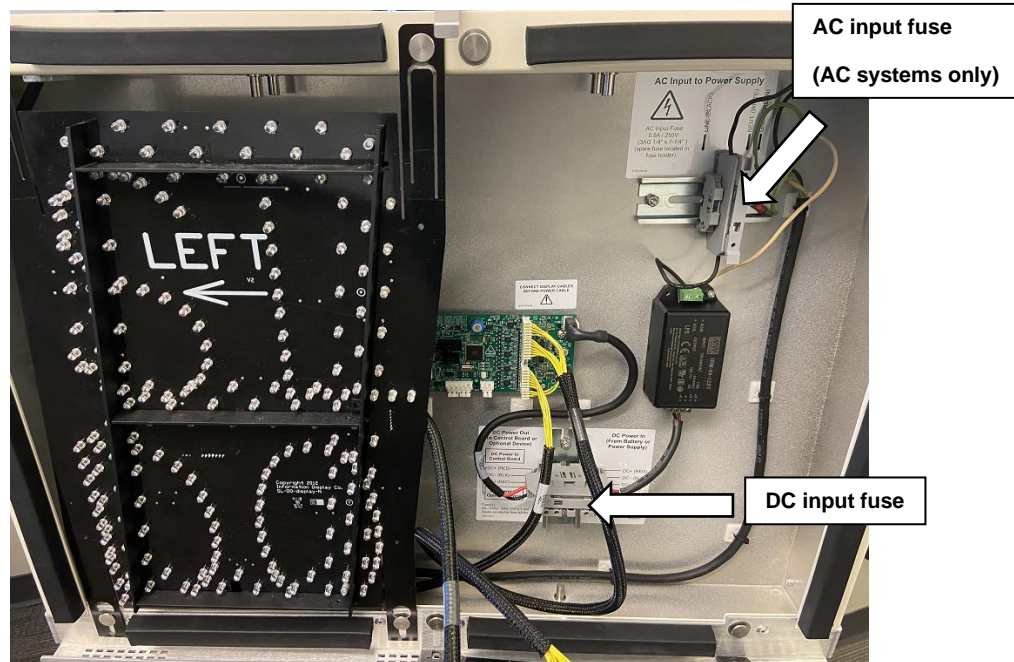


Pull on LED boards to raise tabs

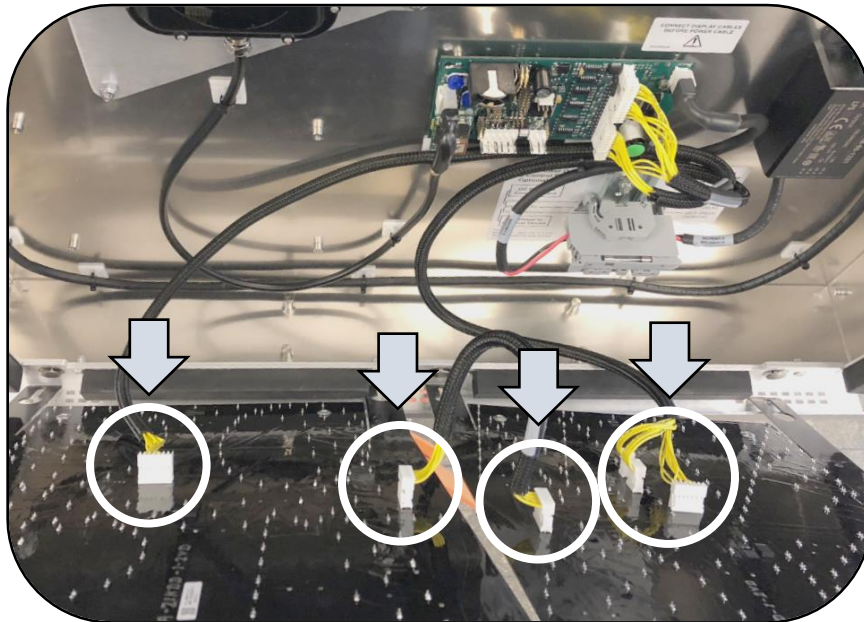


When the top part of the circuit board releases from the upper hanger pins, lower the board to where the cut-outs slip off the lower hanger pins.

6. Open the DIN rail fuse block(s), DC and AC if equipped, as a precaution to ensure no power will feed the controller during this procedure.



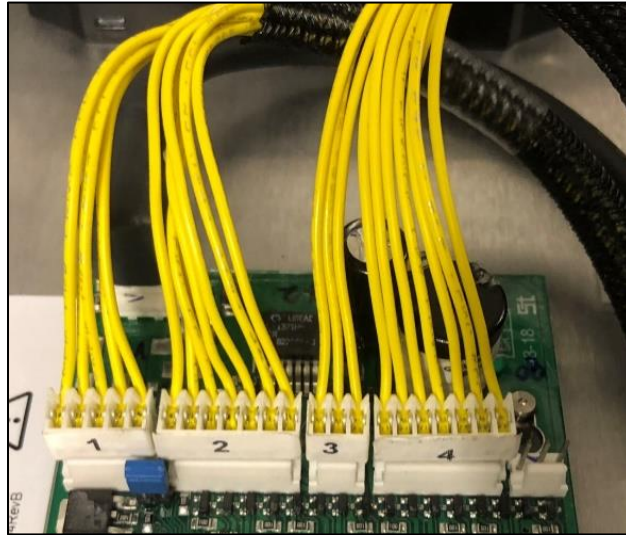
7. Disconnect the LED wiring on the back and set aside the right LED board. Perform the same procedure for the left LED board and remove them both from the system.



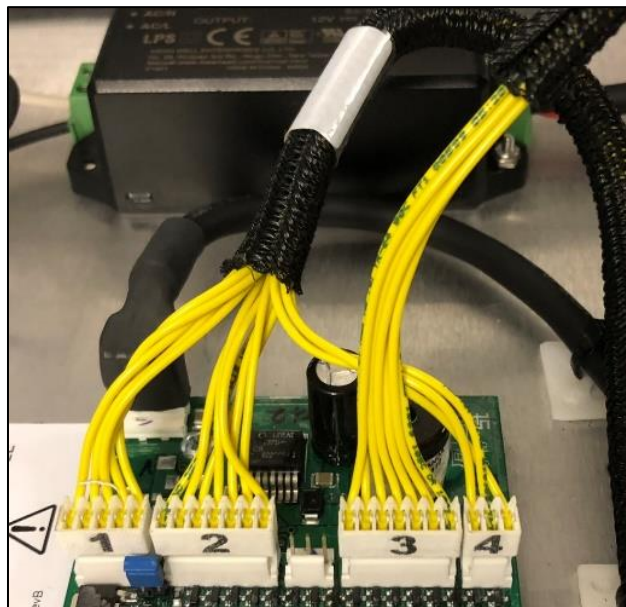
8. Disconnect the LED wiring connected to the control board and remove from the system.
9. Connect the new LED wiring to the control board. Ensure you follow your specific configuration:

No Slow Down (“88” LEDs only):

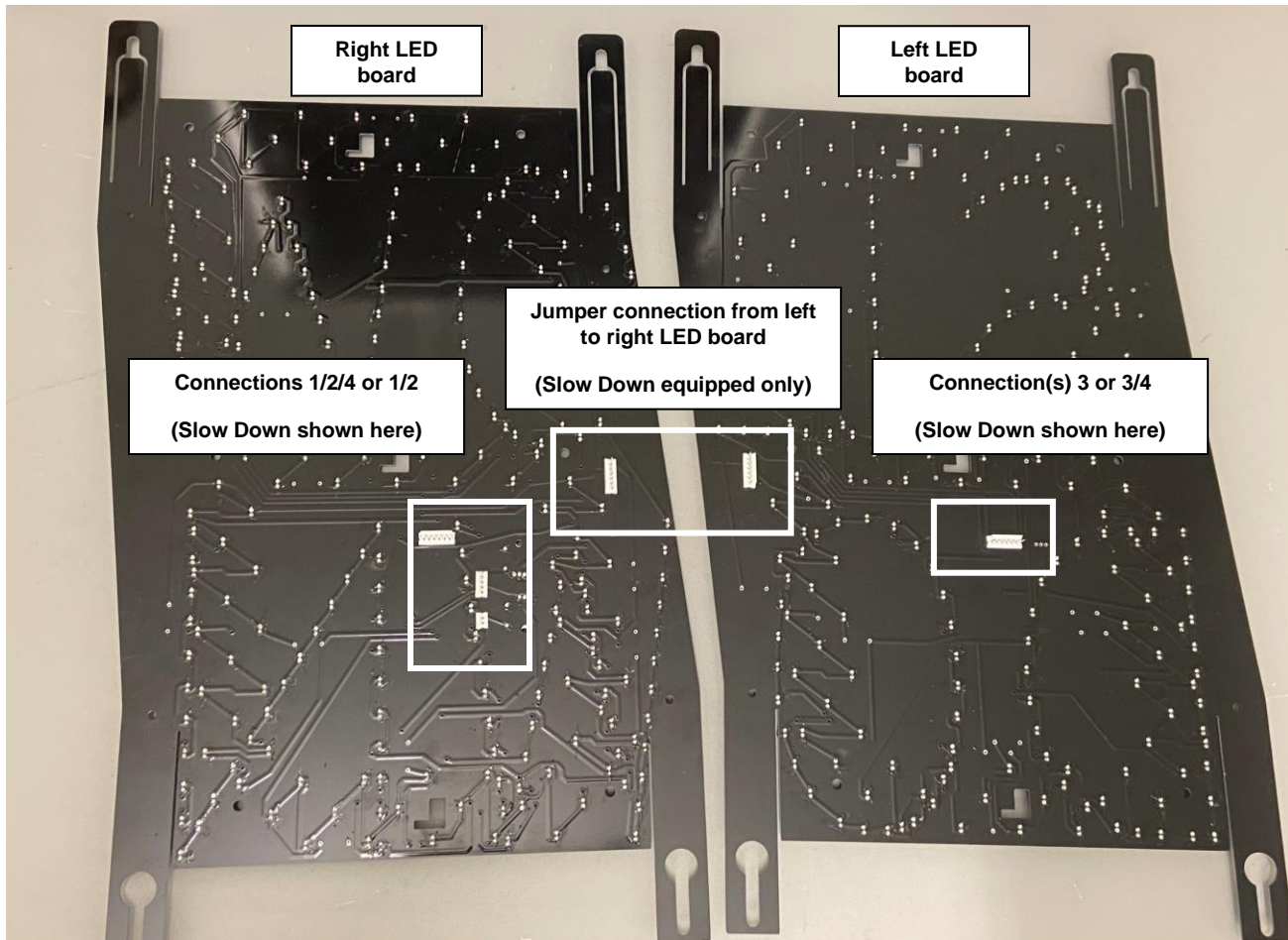
- Left LED board = LED harnesses 3 & 4 (3-pin and 7-pin respectively)
- Right LED board = LED harnesses 1 & 2 (5-pin and 7-pin respectively)

**Slow Down equipped:**

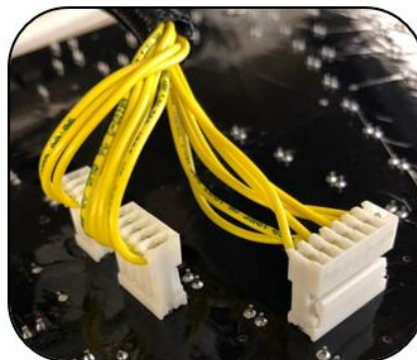
- Left LED board = LED harness 3 only (7-pin)
- Right LED board = LED harnesses 1, 2, & 4 (5-pin, 7-pin, and 3-pin respectively)



10. Connect the partially completed LED wiring from step 9 to the left LED display board and mount it to the radar sign enclosure. Ensure the proper harnesses (1/2 or 1/2/4) connected.
11. Connect remaining wiring to the right LED display board. Ensure the small jumper harness is installed to connect the left and right LED display boards together for systems with Slow Down option.



Left Display Board Connector



Right Display Board Connectors

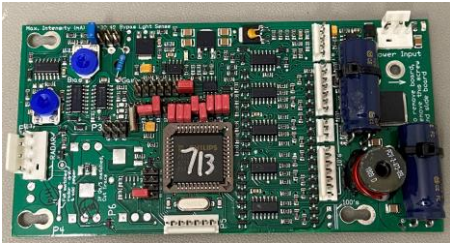
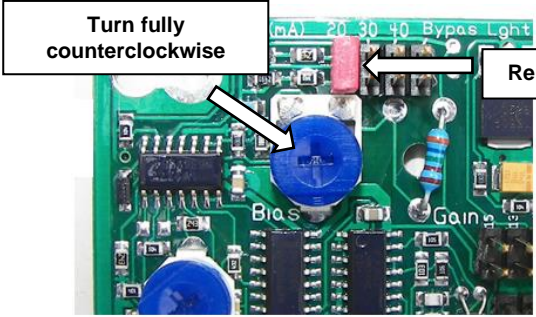



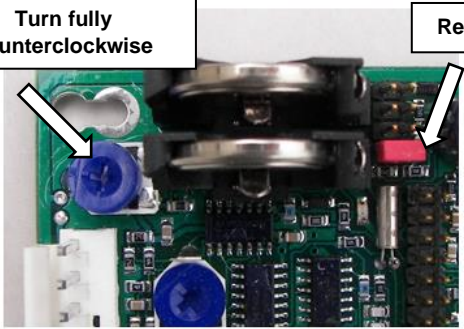

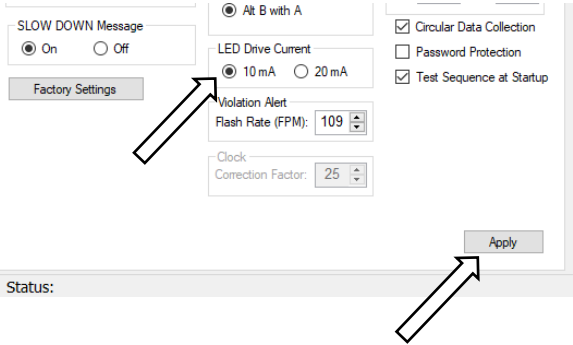
Slow Down Interconnect

12. Close the DIN rail fuse block(s) that were opened from step 6 and carefully install the right LED display board to the radar sign enclosure. For LED boards that have exposed solder joints on the rear do not short them to the enclosure frame while power is applied.
13. Reinstall the fuse(s) or close the breaker in the power cabinet to apply power to the radar sign. Let the sign power up and check that all of the LED segments are operational during the test sequence. This will take up to 60 seconds to complete before the system is ready to detect traffic. Ensure that the system is detecting valid speeds. If the speeds appear incorrect the wiring was not done correctly.
14. Reinstall the polycarbonate window back onto the radar sign and ensure it is secured with the window tab. The glossy side faces towards traffic.
15. Wait for traffic to activate the system and ensure the radar sign is working properly.
16. Reinstall the sign and secure to the enclosure using the two hex screws.
17. Ensure the system is set to low power mode (10mA). Refer to the [Section 2.2](#) for more information.

2.2 Low Power Mode (10mA Setting)

Confirm your controller is configured for the replacement LED display boards. The new LED display boards are more efficient than legacy versions (2010 and older) and can run at a lower power draw. Refer to the table below to set your specific controller to the lower power LED setting (10mA).

Controller Version	Example	Settings For 10mA Mode
Classic (legacy)		<ol style="list-style-type: none"> 1. Locate the top blue potentiometer and jumper pins in the upper left-hand corner of the control board. 2. Remove the red jumper on the pins labelled 20mA as below. 3. Carefully turn the potentiometer fully counterclockwise. 

<p>Legacy Programmable (Bluetooth)</p>		<ol style="list-style-type: none"> 1. Locate the top blue potentiometer and jumper pins in the upper left-hand corner of the control board. 2. Remove the red jumper on the pins as shown below. 3. Carefully turn the potentiometer fully counterclockwise. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">Turn fully counterclockwise</div> <div style="border: 1px solid black; padding: 2px; font-weight: bold;">Remove</div> </div> 
<p>Updated Programmable (Bluetooth)</p>		<ol style="list-style-type: none"> 1. Ensure you are running version 3.0.1.16 or newer of SpeedCheck Manager. 2. Establish a connection with your system with SpeedCheck Manager. 3. Click on Device Setup and type in the password unlock. 4. Verify the LED Drive Current is set to 10mA. If an adjustment is required click on the Apply button when completed. 

NOTE

Download the latest version of SpeedCheck Manager at support.carmanah.com.



© 2021 Carmanah Technologies Corporation

Technical Support:

Email: customersupport@carmanah.com

Toll Free: 1.877.722.8877 (US & Canada)

Worldwide: 1.250.380.0052

Fax: 1.250.380.0062

Web: carmanah.com